

Clean Rail Study

Hydrofuel Inc. has been working with UOIT professors Dr Ibrahim Dincer, Dr Calin Zamfirescu, and their assistant Janette Hogerwaard. We have completed two projects with UOIT to date, the first was the "Comparative study of ammonia-based clean rail transportation systems for Greater Toronto area," done by UOIT with our collaboration and funded by the Harper Conservative government.

Based upon Hogerwaard's above thesis, UOIT published a scientific book on the subject called, "Clean Rail Transportation Option" through SPRINGER Publishing. This book is a comprehensive source of energy and exergy analyses for multi generation systems, namely clean rail transportation systems.

This book assesses and compares several options for ammonia co-fueling of diesel locomotives with integrated heat recovery, multigeneration (including on-board hydrogen fuel production from ammonia), and emission reduction subsystems from energy, exergy, and environmental perspectives. Economic considerations are presented to compare the cost of the proposed systems for different scenarios such as carbon-tax rates, diesel fuel cost and ammonia cost.